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ABSTRACT

The objectives of the program were to provide reading remediation and curriculum enrichment through the use of audiovisual resources and to train teachers in using new instructional media and developing new instructional techniques. The program was coordinated by a full-time teacher with the help of one paraprofessional assistant in each participating school. Mobile carts housing different equipment and materials were moved by the assistants from one classroom to another to provide individual, small group, and whole-group instruction. The target pupils were those evaluated to be below grade level. Evaluation was done through interviews, questionnaires, observations, and analysis of test results for an experimental group from four schools and a control group from six schools. The following findings were obtained: (1) a majority of children who participated in the program liked it, (2) there was a need for better communication with the children as to the methods and goals of the lessons, (3) the general performance was significantly lower in comprehension than in word recognition, (4) the experimental group made significantly greater gains over the control group ($p<.01$) on the Metropolitan Reading Achievement Test, and (5) teachers had mixed reactions to the program--the major problem identified was the relationship between teachers and the paraprofessional assistants. Recommendations were made for improvement and continuation of the program. (AW)

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AN EVALUATION OF THE URBAN EDUCATION PROGRAM

"MULTI-SENSORY STATIONS PROGRAM"

DISTRICT 10, NEW YORK CITY BOARD OF EDUCATION

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AN EVALUATION OF THE URBAN EDUCATION PROGRAM
"MULTI-SENSORY STATIONS PROGRAM"

A. INTRODUCTION

The Multi-Sensory Program, one of the programs funded by State Urban Education Funds in District 10, was designed to foster growth in reading. The program sought to:

1. Vary classroom organization by providing learning corners for small group instruction.
2. Individualize instruction to a greater degree by gearing materials to needs, both in the multi-sensory group and the remaining smaller class group.
3. Add variety to the learning experience through the use of audio visual equipment in individual, small group and whole class arrangements.

Seven schools participated in this project; each equipped with three Multi-Sensory stations. These stations were set up in the following schools: P.S. 7, 8, 26, 33, 56, 59, and 94.

The Multi-Sensory stations consisted of mobile carts that housed tape recorders, phonographs, earphone headsets, connection boxes, filmstrip viewers, desk viewer and a wide range of appropriate reading instruction materials. Materials were commercial and teacher made, designed to meet individual needs. These stations were moved from one classroom to another to provide individual, small group, and whole group instruction. A full time teacher coordinated the program. Each participating school had a paraprofessional assistant who took care of the equipment and supplies and assisted teachers with their use. The project director and teacher coordinator organized in-service training for the paraprofessionals and gave demonstrations for the teachers.

On May 1, 1970, four additional educational assistants (paraprofessionals) were added to each of the four study schools. Because the final evaluation took place in May, these new services were not evaluated.

Attendance sessions by typical target pupils were about 40 minutes per day and varied from once to five times a week for 20 weeks. The children selected were first and second graders who were below grade level as evaluated by teachers, supervisors and guidance counselors, and children in the 3 through 6 grades who scored one and one-half years below grade level on the Metropolitan Reading Achievement Test.

B. OBJECTIVES OF THE PROGRAM

The primary objectives were reading remediation and enrichment of the curriculum through the use of audio-visual resources designed for small group and whole instruction.

The secondary objectives were teacher training in the use of new instructional media and development of new instructional techniques.

C. EVALUATIVE PROCEDURES

Evaluation of the present Multi-Sensory Stations Program was initiated in the Fall of 1969 and continued through May 30, 1970. Four schools; P.S. 33, 56, 59, and 94, were selected as experimental or study schools, from which the study samples were to be drawn. In comparable elementary schools; P.S. 7, 8, 26, 32, 86, and 46, classes were selected as control groups. Two evaluators, one a professor in the Fordham School of Education and the other a graduate assistant, visited the four schools and conducted observations and interviews.

The objectives of the evaluators were:

Determination of the extent to which the program was implemented
Determination of the adequacy of the program in improving reading skills of participating pupils
Determination of the adequacy of the program in changing pupils' attitudes
Determination of the strengths and weaknesses of program administration

The techniques used by the evaluators included interviews, questionnaires, observations, and analysis of test results. The opinions of all participants, educational assistants, teachers, principals, children, and supervisors were sought.

All educational assistants were interviewed, and observed in action; they also completed questionnaires. Questionnaires were also completed by teachers participating in the program. Children were observed in their daily learning sessions with the educational assistants. Reading scores supplied by the district office were analyzed to determine pupil growth.

D. PROGRAM EFFECTIVENESS

1. The Role of the Educational Assistant

Observation of the work of the educational assistants in the four sample schools indicated that varying approaches were utilized. The division of responsibilities between teacher and paraprofessionals differed from classroom to classroom, and from session to session in the same classroom.

(a) The educational assistant took the whole class, and presented the record, tape, workbook, or worksheets while the classroom teacher retired to the side of the room or to her desk.
(b) The educational assistant took a small group of children (3-9) and worked with them at the back of the room, using filmstrips, records, tapes, worksheets, or workbooks. The children knew they belonged to a group. They left their work and joined the assistant. The teacher continued with her work.
(c) The educational assistant assisted the classroom teacher who had requested a particular device or material. In such instances, the teacher taught the lesson to the entire class while the assistant handled the mechanical aids.
(d) The educational assistant and the classroom teacher were both actively involved checking and working with the children while the record or tape gave the directions. In these instances, the teacher made the proper explanations when the children did not get the answers expected of them. The teacher requested particular materials which the assistant set up in the room.

(e) The educational assistant entered the room, whereupon the teacher asked her how many children she wanted. The teacher made the selection.
(f) The educational assistant, to the surprise or even slight annoyance of the classroom teacher, entered the room with her cart. The teacher selected the children among many volunteers. The educational assistant then presented the materials she had brought with her.
(g) The educational assistant, the teacher-in-charge of the project, and the classroom teacher all worked together, with the teacher-in-charge demonstrating the technique, asking leading questions and developing the entire lesson.
(h) The educational assistant delivered the materials ordered by the classroom teacher, set up the materials, and then left.

Some of the educational assistants gave the impression of having a friendly cooperative relationship with the teacher; others gave the impression that little or no communication had been established.

It was evident, in all of the above organizational patterns, that the educational assistants knew how to operate the machines well. Their routines were simplified to the practical essentials. Their pace was unhurried, their manner courteous, and their appearance left nothing to be desired. All assistants were well-groomed, attractive, and presented an image that children could look up to. They had no problem with discipline; the children were anxious to participate. The assistants performed the practical part of their assignment superbly. In fact, in some instances, the children applauded when they entered the room with their mechanical carts.

Interaction with Children. The relationship between the educational assistant and the child varied from warm, friendly, and interested to reserved and impersonal. Some established a warm friendly climate; others completed their tasks without praise or enthusiasm. Some were stopped in the halls and wistfully asked by the children when they would be coming to their class, others were just passed by in the halls. The children responded most enthusiastically in the beginning of the lesson, but as the lesson progressed their attention waned, and even in small groups, some became passive and withdrawn. These quiet passive children often pointed to the wrong thing or failed to follow directions, but they went unnoticed. Frequently, they did not understand the narrator's terms; frequently, their confusion was not noticed by the assistant. It appeared that the educational assistant relied upon the record or tape to do the teaching. Discussion by children was not solicited; only responses that pertained to the questions brought up in the lesson were sought.

Materials. The materials used by the educational assistants were distributed by the district office. The educational assistants stored their materials in hall closets. The materials were organized according to their use on each floor. However, all educational assistants had to transport some materials by hand because there were no carts or because the same materials were needed on two floors. This was a burden for the assistants because some of the mechanical materials were heavy.

The materials were sturdy and well cared for by the assistants as well as the children. The assistants organized their materials so that they knew exactly where to find them.

There was an excellent variety of materials graded for various levels. Generally, the content seemed to be challenging to the children; in several

instances, however, the material was too easy. As the program progressed, some of the materials were exhausted, so that several classes were not serviced because there were no new materials for them.

Success with Children. The evaluation attempted to focus on three overt reactions of the children participating in a sample of the lessons that were observed: attitude, behavior, and comprehension. The term "attitude" was defined in terms of the child's enthusiasm or indifference during the lesson. The child's "behavior" was classified as aggressive, passive, or cooperative; his "comprehension" as reflecting understanding or confusion. This was appraised by considering the child's oral responses during the lesson or by examination of the worksheets completed by the child, which tested his ability to listen, understand, and utilize the knowledge he had gained.

Because of the rapid pace of many of the lessons, and the large number of children participating in some lessons, ratings could not be made on all children. It proved to be possible, however, to rate 121 children on attitude, 100 on behavior, and 102 on comprehension. The ratings assigned follow:

	No.	Per cent
Attitude		
Enthusiasm	92	76.0
Indifference	29	24.0
Behavior		
Aggressive	12	12.0
Passive	35	35.0
Cooperative	53	53.0
Comprehension		
Understanding	38	37.3
Confusion	64	62.7

The majority of the children were very enthusiastic about joining the group. They clearly enjoyed their privilege of separation from the class, hearing stories, hearing male voices, playing games, and using the earphones. However, a good number became passive during the lesson. Furthermore, many did not get the ideas clearly. The passive, indifferent, confused child frequently went unnoticed, even though the groups were small. When the written assignment was over, the educational assistant marked the child's paper; she told him the number of errors he had made and then the lesson ended. The child was to put the worksheet in his folder or to take it home and study his mistakes. The observers saw few attempts by the educational assistants to clarify the child's errors for him.

2. Pupil Growth

Two approaches were utilized in appraising the growth of pupils participating in the program: (a) an informal interview, which presented a reading task, and (2) analysis of changes on the Metropolitan Reading Test administered in March 1969 and in March 1970.

CHILDREN'S RESPONSES

The Interview. This interview was conducted on a one-to-one basis in a deliberately nonthreatening situation.

A sample group of 29 children was selected from the student body on a random

basis. Approximately one half of them were chosen from Grades 4, 5, and 6 and the other half from Grades 1, 2, and 3.

Two sets of questions were prepared, one for the older group (grades 4, 5, 6,, and one for the younger group (grades 1, 2, 3). Both questionnaires included several easy short answer questions which served as an informal opening to the dialogue. In addition, an informal reading task was included on both levels. The questionnaires contained the following questions:

QUESTIONNAIRE FORM A (Grades 1, 2, 3)

1. What is your name?
2. Can you write it here?
3. What grade are you in?
4. What is your teacher's name?
5. What is the lady's name who helps you in the M.S. program?
6. How old are you?
7. Do you have any brothers? How many?
8. Do you have any sisters? How many?
9. Do you like to be helped in reading by Mrs. _____?
10. Can you find any words that you know in this book? (Primer or appropriate higher level book)
11. Please read these words for me.

at	mat	cat	fat	hat	sat	that
an	man	can	fan	tan	van	pan
ing	ring	sing	kind	wing	thing	

12. Can you tell me a word that begins with:

th_____	pl_____
w_____	gr_____
st_____	sp_____

13. Can you think of a word that ends in: and
14. I'd like you to read a little bit from your reader. You may choose any page you like. (Check for word recognition and comprehension)

QUESTIONNAIRE FORM B (Grades 4, 5, 6)

1. What is your name?
2. Can you write it here?
3. What grade are you in?
4. What is your teacher's name?
5. What is the lady's name who helps you in the Multi-Sensory Program?
6. Do you like to be helped in reading by Mrs. _____?
7. Why?
8. Do you like to use the machines?
9. Why?
10. What is the best part of this program?
11. What is decoding?
12. Can you show me how it works?
13. I'd like you to read a little bit from your reader. You may choose anything you like. (Score errors per line) (Check for word recognition and comprehension.)

QUESTIONNAIRE FORM A - CHILDREN'S RESPONSES (Grades 1, 2, and 3)

Questions 1-4 (informal introduction)

For the younger children the answers to the first four questions were almost uniformly correct and done without hesitation. Again, these served as an informal approach to dialogue. Two children were not able to answer question 3, but one of these children was a newly arrived Spanish-speaking child.

Question 5

Six out of 15 children were unable to answer this question.

Questions 6-8

With the exception of the one Spanish-speaking child, all of the children were able to answer questions 6, 7, and 8, all pertaining to their own age and family composition, quickly.

Question 9

Twelve children answered positively. They were glad to have the Educational Assistant help them and had generally positive feelings about the program. The three who answered negatively were not able to elaborate.

Question 10

All of the children were able to pick out 6 or more words from their books that they could read.

Questions 11, 12

Nine children, a majority, were able to do these questions. It must be noted, however, that six children could not read these simple rhyming words or finish a word beginning with specific letter combinations.

Question 13

Only 5 children out of 15 could think of a word that ends in and.

Question 14

Performance on this question was rated by the observer in one of three classifications, according to the following definitions:

poor - the child received this rating if he exhibited very little word recognition and (therefore) virtually no comprehension

satisfactory - this rating was given to a child who showed moderate word recognition, halted word by word vocalization and limited comprehension.

good - this was used to reflect a child's almost complete word recognition (80 - 90% of words recognized), smooth phrasing, and apparently good comprehension.

Of these classifications, in the judgement of the observer, six received a good rating, seven received a satisfactory rating, and two received a poor rating.

QUESTIONNAIRE FORM B - CHILDREN'S RESPONSES (Grades 4, 5, and 6)

Questions 1-4 (informal introduction)

All of the children were able to say and write their names. They all knew what grade they were in and their classroom teacher's name.

Questions 5-10

The responses from the children showed that they liked the program. It was found that 12 out of the 14 children questioned felt positively about the educational assistant and the machines that were used. The two who did not like the program were not able to elaborate as to their reasons. Although positive feelings were expressed, the reason for the program and its goals did not seem to be understood by the children. This was evidenced by their one word reasons for liking the program or their inability in many cases to give a reason at all. "I don't know" was a common response. When asked what they liked about the program they gave such answers as: "the stories," "the movies," or "the earphones."

The two children who did not like the program explained that they did not like being separated from the class, particularly when the class was doing something special.

Questions 11-12

Out of 14 older children interviewed, 12 did not know what decoding was; only two made some attempt to explain this concept.

Question 13

The observer administered to each of the 14 children an informal reading test. This consisted of having each child read from several paragraphs to a page in their own readers.

It was found, on this basis, that the children's performance on word recognition differed from their ability in comprehension. In word recognition, all but one of the children were about evenly spaced along a continuum which ranged from satisfactory (knew more than half the words) to good (knew most of the words). The single exception failed to recognize any of the words. However, the performance of the group in comprehension was significantly lower than in word recognition. Moreover, in contrast to their performance in word recognition, in comprehension the children fell into two rather clearly defined performance levels. About half showed a good understanding of their reading (seemed to understand most of the passage); the other half were poor in comprehension (understood very little of what they were reading). Only two of the children fell into the satisfactory range (understood some of the passage).

On the basis of these 29 interviews certain conclusions can be drawn. First, an overwhelming majority of the children in both the older and younger groups, who had participated in this program, liked it. They felt positively about the educational assistants and enjoyed using the machines. This is undoubtedly a positive factor in the program. Moreover, it is to be noted that the educational assistants presented no threat or fear to the children.

With respect to the reading itself, there is certainly some successful reading among these children. It is the observers opinion, however, that with more specific help geared directly to the actual deficiencies of each child, the success would be even greater. It is felt that the number of children who failed to read even very simple words as well as those who rated from poor to satisfactory on the informal reading test could, with specific professionally guided training, be reduced.

Comprehension was lower than word recognition skills and negligible in a good percentage of children, indicating that comprehension may be being overlooked in favor of word attack skills and drills. Learning to sound out the words and recognize them is essential, but if the meaning of these words is not understood, reading is of little value. While the mechanical aspects of reading are basic to the reading process, comprehension must also be considered. If the child is to be successful in school he must possess both skills.

The one word reasons for liking the program and the 35% in the younger group who did not know the Educational Assistants name indicate a need for better communication with the children as to the methods and goals of the lessons. The child needs clarification as to his role in the program.

Analysis of Test Results. The Metropolitan Reading Achievement Test is administered each spring by the New York Board of Education to all elementary school children. Scores from these tests were used to measure the progress from both the study groups and the control groups, between the Spring 1969 and 1970. A group of 103 pupils was selected randomly from those participating in the program, and a group of 92 pupils was chosen in a similar way from the control schools. The relative progress of the two groups was compared.

This comparison indicated that the experimental group, comprised of children enrolled in the Multi-Sensory Program achieved a mean gain of 7.9 months in the interval between tests, as opposed to a mean gain of 4.9 months for the control group. The difference in mean growth shown by the two groups was significant at the .01 level.

3. Reactions of the Teachers and Paraprofessionals to the Program

The reactions of teachers were appraised through responses to a questionnaire that was sent to the 75 teachers whose classes were participating in the program. Responses were obtained from only 30 (40%) of the teachers. While the number of responses was small, the observations of the teachers are of interest.

It was clear that all the teachers did not look upon the program in the same way. To one-half of the teachers, the program was a means of helping those children who "needed it most"; as such, they selected small groups of children to work with an educational assistant. The remainder of the teachers evidently felt that the program was of value to all of their children, and the whole class, or a very large proportion of the class, participated.

Reactions to the program were mixed. Again, approximately one-half of the teachers saw themselves as playing a positive role in the program - making recommendations, diagnosing pupil needs, choosing materials. The others, however, looked upon their participation in the program rather negatively - they felt that

they were bystanders, assistants to the paraprofessionals, disciplinarians. At best, they felt that their function was to keep the other children busy while a handful of children used the earphones.

Opinions concerning the value of the program were also mixed. Nineteen of the 30 respondents found the materials novel, motivating, and enriching. Eight saw no values in the program at all; one questioned its value in relation to the costs involved. Two respondents did not feel qualified to judge. Among the negative aspects cited by the teachers, including some of the teachers whose overall reaction to the program was positive, were the lack of teacher involvement in the program, the failure to extend the program to all children, and the failure to provide service on a daily basis. Teachers felt, too, that more time should be spent on small group instruction. A common complaint, voiced by two-thirds of the teachers, was that they never used the multi-sensory material alone.

It was quite clear, from the written responses to the questionnaire and from the interviews with the teachers, that one of the major problems yet to be resolved centered about the relationship of teacher and educational assistant.

The reactions of the paraprofessionals were gauged through an interview that was conducted with eight paraprofessionals in the four sample schools. All of the paraprofessionals were quite clear about their role in the program; they looked upon themselves mainly as assistants working with groups of varying size, as aides to the teacher. They viewed the classroom teacher as the person responsible for diagnosis, selection of children, and for follow-up of the work done in small groups. Some felt that they were more familiar than the teacher with the material available, but they all indicated that the teacher should participate in choosing the materials to be used. Lack of time to confer with the teacher, lack of space, and noisy rooms were cited as major difficulties.

E. RECOMMENDATIONS

1. In view of the demonstrated success of the program in fostering pupil growth, the Multi-Sensory Stations Program should be continued.

2. The roles of all participants in the program should be more clearly defined. The classroom teacher should assume an active leadership role in the program. She should familiarize herself with all materials used in the program, and with the operation of the mechanical aids. The teacher should assume full responsibility for the development of those lessons where an entire class is using multi-sensory materials; in instances where small groups are involved, the teacher should diagnose pupil weaknesses and actively participate in the selection of materials to be presented. The classroom teacher and the educational assistant should cooperatively plan the week's work.

3. Time should be allotted, on a scheduled basis, for conferences between the teacher and the educational assistant. Some of this conference time might be given over to the exploration of new materials.

4. Care should be taken to notify the educational assistants when classes or groups will be unable to meet for their regular sessions, and provision made for using the services of the educational assistant; perhaps for individual instruction of children.

5. Provision should be made for better communication between teacher and educational assistant concerning the progress shown by the child. The development of a standard form for reporting progress should be explored.